

What is claimed is:

1. An apparatus for use in a real-time financial market portfolio monitoring system, for continuously valuing a data collection comprising a first plurality of data items, the apparatus comprising:

5 storage means for storing the first plurality of data items, said storage means further storing a second plurality of data items, each data item of the first plurality having assigned a respective one of the data items of the second plurality, each data item of the second plurality representing an individual data item value;

10 an interface module for establishing data connections to receive input data; and

a processor for continuously updating data items of the second plurality stored in said storage means based upon the received input data, and calculating a data collection value for the data collection based on data item
15 values of the updated data items;

wherein the apparatus further comprises:

a controller for controlling said interface module to connect to one or more of at least two data sources to receive said input data.

2. The apparatus of claim 1, wherein said data collection represents a
20 portfolio of financial instruments, each data item of the first plurality comprises an identifier identifying at least one of said financial instruments, and the individual data item values represented by the data items of the second plurality indicate prices of the respective financial instruments.

3. The apparatus of claim 1, wherein said controller is adapted to control
25 said interface module to change said data connections based on a time-driven schedule.

4. The apparatus of claim 1, wherein said controller is adapted to receive an input control signal to control said interface module to change said data connections in an event-driven manner based on said input control signal.
5. The apparatus of claim 1, wherein said processor is capable of continuously updating a data item of the second plurality based upon input data received substantially simultaneously from two or more data sources.
6. The apparatus of claim 5, wherein said processor is further arranged to perform a calculation algorithm upon input data received from said two or more data sources.
- 10 7. The apparatus of claim 1, wherein each data item value represented by one of the data items of the second plurality is of one of at least two data item types, and said storage means further stores a third plurality of data items, each data item of the second plurality having assigned a respective one of the data items of the third plurality, each data item of the third plurality identifying the data item type relating to the data item value represented by the corresponding data item of the second plurality.
- 15 8. The apparatus of claim 7, wherein said processor is capable of calculating said data collection value based on data item values of different types.
- 20 9. The apparatus of claim 1, wherein said input data comprises value information and unit information, and said processor is capable of converting values of different units into corresponding values of a predefined unit by applying appropriate conversion factors, before calculating said data collection value.
- 25 10. The apparatus of claim 1, wherein said input data comprises value information, and said processor is capable of determining unit information for the received value information dependent on the respective data source or sources where said input data is received from, and converting values of

different units into corresponding values of a predefined unit by applying appropriate conversion factors, before calculating said data collection value.

11. The apparatus of claim 9, wherein said input data further comprises rate information indicating said conversion factors.

5 12. The apparatus of claim 11, wherein said interface module is capable of establishing different data connections to receive said value information and said rate information.

13. The apparatus of claim 11, wherein said processor is arranged to update said data items of the second plurality based upon received rate information
10 even if no value information is received, and recalculate said data collection value based on data item values of the updated data items.

14. The apparatus of claim 1, wherein said processor is adapted to calculate said data collection value also based on at least one estimation value obtained by applying a predefined value determination algorithm, in case a data item
15 value is not available.

15. The apparatus of claim 14, wherein said predefined value determination algorithm comprises an implementation of the Balck-Scholes formula.

16. The apparatus of claim 1, wherein said processor is adapted to calculate said data collection value also based on at least one estimation value in case a
20 data item value is not available, said estimation value being obtained from either a configuration file stored in said storage means or from received input data.

17. The apparatus of claim 1, wherein said storage means further stores amount data indicating an individual amount assigned to each of said data
25 items of the first plurality.

18. The apparatus of claim 17, wherein said processor is adapted to adjust the amount data of at least one data item in response to a corporate action.

19. The apparatus of claim 18, wherein said processor is adapted to determine a synthetic value of at least one data item of the second plurality by adjusting existing data item values in case of a corporate action, and calculate said data collection value also based on said synthetic value.

5 20. The apparatus of claim 1, wherein said processor is adapted to apply a filter algorithm on the received input data before updating the data items of the second plurality, said filter algorithm being configured to enable said processor to block input data that would, after having updated data items of the second plurality, lead to data item values significantly deviating from respective
10 previous data item values, or from predefined reference values.

21. The apparatus of claim 1, wherein said processor is adapted to apply a filter algorithm on calculated data collection values, said filter algorithm being configured to enable said processor to block a calculated data collection value that significantly deviates from a previous data collection value, or from a
15 predefined reference value.

22. The apparatus of claim 21, further comprising:

an output module for outputting calculated data collection values to one or more recipients,

wherein said processor is adapted to inhibit a blocked data collection value from
20 being output.

23. The apparatus of claim 21, further comprising:

an output module for outputting calculated data collection values to one or more recipients,

wherein said processor is adapted to control said output module to output a
25 blocked data collection value together with a flag indicating that the output data collection value is unconfirmed.

24. The apparatus of claim 21, further comprising:

a user interface module connected to receive user input data indicative of instructions to change the blocking behaviour and/or adjust deviation limits of said filter algorithm.

5 25. The apparatus of claim 1, further comprising:

an output module for outputting calculated data collection values to one or more recipients,

wherein said processor is adapted to convert calculated data collection values by applying appropriate unit conversion factors, before controlling said output
10 module to output the values.

26. The apparatus of claim 25, wherein said processor is configured to apply multiple unit conversion factors for different currencies to calculate multiple data collection values for individual recipients.

27. The apparatus of claim 25, wherein said input data comprises rate
15 information enabling said processor to determine said unit conversion factors.

28. The apparatus of claim 25, further comprising:

a user interface module connected to receive user input data indicative of instructions to change at least one of said unit conversion factors.

29. The apparatus of claim 1, wherein said processor is adapted to
20 recalculate previously calculated data collection values based on correction data indicating at least one corrected data item value of the second plurality.

30. The apparatus of claim 29, wherein said correction data is comprised in said input data.

31. The apparatus of claim 29, further comprising:

25 a user interface module connected to receive user input data indicative of said correction data.

32. A computer-implemented method for monitoring a financial market portfolio in real-time by continuously valuing a data collection comprising a first plurality of data items, the method comprising the steps of:

5 storing the first plurality of data items and a second plurality of data items, each data item of the first plurality having assigned a respective one of the data items of the second plurality, each data item of the second plurality representing an individual data item value;

connecting to one or more of at least two data sources to receive input data;

10 continuously updating stored data items of the second plurality based upon the received input data; and

calculating a data collection value for the data collection based on data item values of the updated data items.

15 33. The computer-implemented method of claim 32, wherein said data collection represents a portfolio of financial instruments, each data item of the first plurality comprises an identifier identifying at least one of said financial instruments, and the individual data item values represented by the data items of the second plurality indicate prices of the respective financial instruments.

34. The computer-implemented method of claim 32, further comprising:

20 changing data connections used for receiving input data based on a time-driven schedule.

35. The computer-implemented method of claim 32, further comprising:

changing data connections used for receiving input data in an event-driven manner based on said input control signal.

25 36. The computer-implemented method of claim 32, wherein the step of continuously updating comprises:

continuously updating a data item of the second plurality based upon input data received substantially simultaneously from two or more data sources.

37. The computer-implemented method of claim 36, further comprising:

performing a calculation algorithm upon input data received from said two or
5 more data sources.

38. The computer-implemented method of claim 32, wherein each data item value represented by one of the data items of the second plurality is of one of at least two data item types, and the method further comprises storing a third plurality of data items, each data item of the second plurality having assigned a
10 respective one of the data items of the third plurality, each data item of the third plurality identifying the data item type relating to the data item value represented by the corresponding data item of the second plurality.

39. The computer-implemented method of claim 38, wherein the step of calculating a data collection value is based on data item values of different
15 types.

40. The computer-implemented method of claim 32, wherein said input data comprises value information and unit information, and the method further comprises converting values of different units into corresponding values of a predefined unit by applying appropriate conversion factors, before calculating
20 said data collection value.

41. The computer-implemented method of claim 32, wherein said input data comprises value information, and the method further comprises determining unit information for the received value information dependent on the respective data source or sources where said input data is received from, and converting values
25 of different units into corresponding values of a predefined unit by applying appropriate conversion factors, before calculating said data collection value.

42. The computer-implemented method of claim 40, wherein said input data further comprises rate information indicating said conversion factors.

43. The computer-implemented method of claim 42, wherein the step of connecting comprises establishing different data connections to receive said value information and said rate information.

44. The computer-implemented method of claim 42, further comprising:

- 5 updating said data items of the second plurality based upon received rate information even if no value information is received, and recalculating said data collection value based on data item values of the updated data items.

45. The computer-implemented method of claim 32, wherein the step of calculating a data collection value is also based on at least one estimation value
10 obtained by applying a predefined value determination algorithm, in case a data item value is not available.

46. The computer-implemented method of claim 45, wherein said predefined value determination algorithm comprises an implementation of the Balck-Scholes formula.

15 47. The computer-implemented method of claim 32, wherein the step of calculating a data collection value is also based on at least one estimation value in case a data item value is not available, said estimation value being obtained from either a stored configuration file or from received input data.

48. The computer-implemented method of claim 32, further comprising:

- 20 storing amount data indicating an individual amount assigned to each of said data items of the first plurality.

49. The computer-implemented method of claim 48, wherein said processor is adapted to adjust the amount data of at least one data item in response to a corporate action.

50. The computer-implemented method of claim 49, further comprising:

determining a synthetic value of at least one data item of the second plurality by adjusting existing data item values in case of a corporate action, and calculating said data collection value also based on said synthetic value.

5 51. The computer-implemented method of claim 32, further comprising:

applying a filter algorithm on the received input data before updating the data items of the second plurality, said filter algorithm being configured to allow blocking input data that would, after having updated data items of the second plurality, lead to data item values significantly deviating from respective
10 previous data item values, or from predefined reference values.

52. The computer-implemented method of claim 32, further comprising:

applying a filter algorithm on calculated data collection values, said filter algorithm being configured to allow blocking a calculated data collection value that significantly deviates from a previous data collection value, or from a
15 predefined reference value.

53. The computer-implemented method of claim 52, further comprising:

outputting calculated data collection values to one or more recipients,
wherein a blocked data collection value is inhibited from being output.

54. The computer-implemented method of claim 52, further comprising:

20 outputting calculated data collection values to one or more recipients,
wherein a blocked data collection value is output together with a flag indicating that the output data collection value is unconfirmed.

55. The computer-implemented method of claim 52, further comprising:

receiving user input data indicative of instructions to change the blocking
25 behaviour and/or adjust deviation limits of said filter algorithm.

56. The computer-implemented method of claim 32, further comprising:

outputting calculated data collection values to one or more recipients, and

converting calculated data collection values by applying appropriate unit conversion factors, before outputting the values.

5 57. The computer-implemented method of claim 56, further comprising:

applying multiple unit conversion factors for different currencies to calculate multiple data collection values for individual recipients.

58. The computer-implemented method of claim 56, wherein said input data comprises rate information enabling said processor to determine said unit
10 conversion factors.

59. The computer-implemented method of claim 56, further comprising:

receiving user input data indicative of instructions to change at least one of said unit conversion factors.

60. The computer-implemented method of claim 32, further comprising:

15 recalculating previously calculated data collection values based on correction data indicating at least one corrected data item value of the second plurality.

61. The computer-implemented method of claim 60, wherein said correction data is comprised in said input data.

62. The computer-implemented method of claim 60, further comprising:

20 receiving user input data indicative of said correction data.

63. A computer program product comprising at least one storage medium having stored thereon instructions to monitor a financial market portfolio in real-time, wherein said instructions, when executed on a processor, cause said processor to continuously value a data collection comprising a first plurality of
25 data items by:

storing the first plurality of data items and a second plurality of data items, each data item of the first plurality having assigned a respective one of the data items of the second plurality, each data item of the second plurality representing an individual data item value;

5 connecting to one or more of at least two data sources to receive input data;

continuously updating stored data items of the second plurality based upon the received input data; and

10 calculating a data collection value for the data collection based on data item values of the updated data items.

64. A financial market portfolio monitoring system comprising an apparatus for continuously valuing a data collection comprising a first plurality of data items, the apparatus comprising:

15 a storage unit for storing the first plurality of data items, said storage unit further storing a second plurality of data items, each data item of the first plurality having assigned a respective one of the data items of the second plurality, each data item of the second plurality representing an individual data item value;

20 an interface module for establishing data connections to receive input data;

a processor for continuously updating data items of the second plurality stored in said storage unit based upon the received input data, and calculating a data collection value for the data collection based on data item values of the updated data items; and

25 a controller for controlling said interface module to connect to one or more of at least two data sources to receive said input data.